

CLIMATOLOGICAL DATA FOR AUGUST, 1912.

DISTRICT No. 4, THE LAKE REGION.

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GENERAL SUMMARY.

Unseasonably cold, cloudy, wet, and for the most part disagreeable weather prevailed in the Lake region during August, 1912. High relative humidity, as in July, continued throughout the month, and the number of clear days was remarkably small. In fact, in some localities, the damp, cool weather was so pronounced as to interfere seriously with harvesting and thrashing, and to lengthen considerably the season required for the proper maturing of corn. Some grain and root crops were reported damaged by the continuous rains, while in New York State it was estimated that the yield of grapes would be reduced nearly 25 per cent. On the other hand, the weather conditions were unfavorable for many kinds of insect life, and as a result tree fruits in that region were in excellent shape and gave promise of an abundant harvest. The weather was generally quite favorable for the growth of grasses, but at the end of the month vegetation, as a rule, was in need of warm weather with bright sunshine.

The following table summarizes the chief features of meteorological interest in the various portions of the district:

Portions of States.	Mean temperature.	Departure.	Mean daily range.	Mean precipitation.	Departure.	Greatest precipitation in 24 hours.	Number of days.				Prevailing wind direction.
							With 0.01 inch or more.	Clear.	Partly cloudy.	Cloudy.	
Minnesota.....	58.9	-4.6	12.3	3.00	-0.80	1.02	10	6	13	12	ne.
Wisconsin.....	63.4	-3.5	13.2	5.23	+2.66	3.38	12	9	10	12	ne.
Illinois.....	71.0	-0.2	12.9	3.59	+0.71	1.83	9	8	15	8	sw.
Indiana.....	69.3	-2.1	19.1	4.26	+1.34	3.10	11	14	10	7	sw.
Upper Michigan.....	58.4	-4.5	12.7	5.00	+1.93	2.85	12	7	8	16	nw.
Lower Michigan.....	64.7	-2.9	15.7	3.85	+1.17	2.97	11	8	12	11	sw.
Ohio.....	67.5	-2.3	14.8	3.85	+0.71	2.30	16	10	12	9	sw.
Pennsylvania.....	66.2	-3.7	11.7	5.90	+2.64	1.19	16	1	13	17	s.
New York.....	62.9	-3.4	15.3	3.75	+0.59	1.67	15	6	15	10	w.
Vermont.....	61.5	-3.7	18.4	3.92	-0.46	1.55	16	4	14	13	s.

TEMPERATURE.

Mean temperatures were below the normal in all portions of the district, and August was the fifth month of the present year to present such conditions. The average daily deficiency for the Lake region since January 1, 1912, is now between 3° and 4° generally. In a number of localities, especially in the Lake Superior region, the month was the coldest August on record, and the temperature of nearly every day was below the seasonal average. There were no exceptionally warm days during the month, the regular Weather Bureau stations in the

district reporting only 10 instances on which the daily mean temperatures rose to 10° or more above the normals, while deficiencies of 10° to 14° were frequent. Periods of moderate warmth occurred on the 9th-14th, 18th-22d, 24th-26th, and 31st, but none extended over the entire district on any one day. The 1st-5th and the 15th-17th were exceptionally cold for August, as were also the last four days of the month in the New York and Vermont sections. Frost or freezing temperatures were reported at several stations in northeastern Minnesota, upper Michigan, and New York State during the course of the month, but considering the prevailing low temperatures frost did not occur as often as might be expected, and but little damage resulted.

PRECIPITATION.

Precipitation was frequent in all portions of the Lake region during August, especially over the eastern sections, where the number of rainy days was the greatest on record for this month. Yet the average amounts for the period were not exceptional and were even somewhat below the normal over the western Lake Superior region and in the Champlain Valley. During the 17th-19th a number of severe thunderstorms occurred over the southern portions of the district, causing considerable damage as a result of lightning, wind, rain, and hail. Trains were delayed by washouts, telegraph and telephone lines were blown down, buildings were destroyed by lightning, and a number of lives were lost. In Portage County, Ohio, eight bridges were destroyed by high water following the heavy rain of the 26th.

Snow was reported by the newspapers to have fallen at Lapeer, Mich., on the 2d, but investigation proves that the phenomenon was hail falling in very fine pellets.

AUGUST, 1912, LAKE LEVELS.

The following data are from the report of the United States Lake Survey:

	Lake Superior.	Lakes Michigan-Huron.	Lake Erie.	Lake Ontario.
Above tidewater at New York.....	Feet. 602.49	Feet. 580.53	Feet. 572.45	Feet. 246.66
Above or below:				
Stage of July, 1912.....	+0.23	+0.10	-0.11	-0.35
Stage of August, 1911.....	+0.25	+0.70	+0.84	+1.47
Mean stage August last 10 years.....	-0.25	-0.45	-0.24	+0.04
Highest recorded stage.....	-1.44	-2.83	-1.66	-1.60
Lowest recorded stage.....	+0.89	+0.70	+1.07	+2.31
Probable change during September.....	+0.10	-0.20	-0.30	-0.40

TABLE 1.—Climatological data for August, 1912. District No. 4, Lake region.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
<i>Minnesota.</i>																					
Cloquet	Carlton	800	1	57.8	.....	80	12†	32	2	34	3.24	.....	0.70	0	7	1	20	10	e.	Walter McDonald.
Duluth	St. Louis	1,133	41	57.4	- 7.5	78	21	42	2	22	3.25	- 0.28	1.02	0	15	3	11	17	ne.	U. S. Weather Bureau.	
Floodwood	do.	1,257	6	.....	.....	.....	.....	.....	.....	.....	3.12	.....	1.00	0	8	9	3	19	.....	M. H. Schussler.
Stephens Mine	do.	1,500	5	59.8	.....	88	12	33	4	40	2.86	.....	0.90	0	10	12	13	8	w.	Oliver Iron Mining Co.
Two Harbors	Lake	614	18	59.6	- 3.7	84	13	40	15	28	2.45	- 1.30	0.80	0	7	5	19	7	ne.	G. W. Watts.	
Virginia	St. Louis	1,434	18	59.8	- 2.5	81	11	36	4	37	3.10	- 0.81	0.87	0	10	4	12	15	se.	Oliver Iron Mining Co.	
<i>Wisconsin.</i>																					
Appleton	Outagamie	795	11	66.0	- 1.9	94	25	47	3†	39	6.07	+ 3.72	2.02	0	12	12	10	9	e.	Wm. O. Thiede.	
Ashland	Ashland	647	21	60.8	- 6.3	88	11	41	5	32	4.76	+ 1.62	1.89	0	11	10	5	16	e.	Sam Wheeler.	
Bayfield	Bayfield	635	3	61.2b	.....	80b	13	42b	5	30b	4.34	.....	1.17	0	9	10b	19b	19b	ne.	Frank Kern.
Cecil	Shawano	804	14	61.8	- 5.1	85	24	42	3†	30	5.86	+ 3.59	1.38	0	11	10	15	6	sw.	Louis W. Schmidt.	
Corunocopia	Bayfield	0	0	59.4	.....	80	12	38	15†	33	2.86	.....	0.71	0	11	1	16	14	sw.	Reed Fruit Co.
Crandon	Forest	1,060	17	59.2a	- 4.4	84a	24	36a	4	32a	6.95	+ 4.35	1.85	0	16	4	10	17	se.	Frank Shoemaker.	
Florence	Florence	1,293	21	59.2b	- 4.2	85b	24	37b	5†	32b	6.65	+ 3.45	1.73	0	8	12	4	15	ne.	Fred S. Evans.	
Fond du Lac	Fond du Lac	800	26	66.5	- 1.2	92	25	44	27	32	6.56	+ 3.42	1.90	0	13	19	7	5	w.	Edward A. Seeley.	
Grand River Locks	Marquette	770	16	66.5	.....	90	25	40	4	32	7.91	+ 3.93	2.75	0	13	10	8	13	sw.	Jerry Parkinson.
Green Bay	Brown	617	26	63.8	- 3.2	86	24	47	4	28	3.92	+ 0.82	1.04	0	14	0	11	20	n.	U. S. Weather Bureau.	
High Falls	Marinette	810	0	61.6	.....	89	24	38	4	34	6.81	.....	1.78	0	14	12	4	15	nw.	No. Hydro-Elec. Power Co.
Iron River	Bayfield	1,096	3	59.5	.....	84	12	34	2	40	3.53	.....	0.70	0	13	9	8	14	e.	Winfield E. Tripp.
Kewaunee	Kewaunee	590	3	62.6	.....	86	24	47	3†	34	4.08	.....	0.94	0	8	8	7	16	sw.	Eugene V. Kimball.
Manitowoc	Manitowoc	616	61	63.6	- 2.9	86	24	47	16	29	3.77	+ 0.78	1.64	0	10	2	11	18	ne.	Miss Johanna Lups.	
Menasha	Winnebago	764	15	.....	.....	.....	.....	.....	.....	.....	5.80	+ 3.49	2.19	0	12	12	8	11	se.	Geo. T. Allanson.
Menomonee Falls	Waukesha	842	3	66.2	.....	89	25	43	4	32	2.76	.....	0.56	0	10	12	13	6	se.	Arthur H. Christman.
Milwaukee	Milwaukee	681	42	67.0	- 1.7	89	24	52	4	28	2.14	- 0.68	0.58	0	10	8	12	11	n.	U. S. Weather Bureau.	
New London	Outagamie	762	16	64.0	- 4.0	90	25	42	16	30	7.60	+ 4.63	1.60	0	15	10	5	16	se.	August H. Pape.	
Oconto	Oconto	590	21	63.0a	- 4.3	86a	24	44a	3†	29a	9.02	+ 6.52	3.38	0	12	6	13	12	se.	Wm. K. Smith.	
Oshkosh	Winnebago	744	23	64.7	- 4.1	92	25	45	4†	31	5.38	+ 2.54	1.60	0	11	14	13	4	nw.	Evan Vincent.	
Pine River	Waushara	900	17	65.0	- 3.1	91	25	44	3†	28	6.51	+ 3.53	1.84	0	15	4	17	10	nw.	Geo. H. Carpenter.	
Plum Island	Door	588	4	62.3	.....	82	13†	47	16	26	5.45	.....	0.90	0	17	4	12	15	nw.	Geo. C. Robinson.
Plymouth	Sheboygan	843	2	64.4	.....	90	25	47	3†	31	4.61	.....	1.41	0	13	10	7	14	sw.	Paul O. Feldrappe.
Port Washington	Ozaukee	713	19	65.3	- 2.5	90	24	47	3	30	3.64	+ 0.60	1.16	0	10	10	8	13	ne.	Richard C. Kann.	
Racine	Racine	633	15	68.6	- 2.0	90	17†	48	5	29	1.80	- 1.24	0.44	0	10	14	9	8	ne.	Daniel Davis.	
Ripon	Fond du Lac	935	2	66.4	.....	90	25	47	4	29	6.35	.....	1.72	0	11	11	11	9	nw.	Ripon College.
Sheboygan	Sheboygan	831	13	65.9	- 4.1	89	25	50	3†	29	5.73	+ 2.84	1.70	0	8	7	14	10	se.	Louis C. Meyer.	
Sturgeon Bay	Door	600	13	61.5	- 4.7	85	24	40	16	28	6.00	.....	2.57	0	11	7	8	16	ne.	Adam N. Dier.
Superior	Douglas	671	3	58.6	.....	78	13†	44	27	27	3.81	.....	0.62	0	15	6	12	13	ne.	Edward B. Banks.
Waupaca	Waupaca	857	17	64.2	- 3.9	93	25	41	3†	34	6.11	+ 2.70	2.25	0	15	5	12	14	se.	James H. Flagg.	
<i>Illinois.</i>																					
Chicago	Cook	824	42	71.0	- 0.2	95	31	55	4	27	3.59	+ 0.71	1.83	0	9	8	15	8	sw.	U. S. Weather Bureau.	
Evanston	do.	601	0	70.4	.....	96	31	50	4	29	3.14	.....	1.07	0	10	9	6	16	.....	City of Evanston.
<i>Indiana.</i>																					
Auburn	DeKalb	874	16	67.6	- 2.7	90	31	41	5	37	6.10	+ 2.88	1.93	0	14	9	11	11	sw.	Mrs. Josie B. Kuhlman.	
Berne	Adams	849	3	70.3	.....	92	31	45	3†	30	5.78	.....	1.98	0	12	16	8	7	sw.	Henry M. Reusser.
Elkhart	Elkhart	801	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	Dr. Miles Medical Co.
Fort Wayne	Allen	856	16	69.0	- 2.1	91	31	47	3	31	5.04	+ 1.75	2.22	0	13	11	15	5	sw.	U. S. Weather Bureau.	
Hammond	Lake	598	21	70.0	- 1.5	97	31†	45	5	37	1.65	- 0.60	0.60	0	6	12	13	6	.....	Carson W. Whitney.
Howe	Lagrange	886	7	68.4	.....	92	20†	42	2†	40	2.92	.....	0.92	0	10	22	0	9	.....	James E. Zook.
Notre Dame	St. Joseph	712	1	68.0	.....	92	31	45	5	28	6.17	.....	3.10	0	12	13	13	5	sw.	U. S. Weather Bureau.
Whiting	Lake	606	3	71.5	.....	97	31	50	5	33	2.16	.....	0.58	0	9	14	13	4	ne.	D. H. Boyd.
<i>Michigan—Upper Peninsula.</i>																					
Baraga	Baraga	623	10	.....	.....	89	13	.....	.....	.....	2.60	+ 0.28	0.40	0	11	4	0	27	w.	D., S. S. & A. Ry.
Bergland	Ontonagon	1,300	2	59.4	.....	82	13†	34	5	37	5.87	.....	1.57	0	8	7	3	21	nw.	Frank McMonigal.
Blaney	Schoolcraft	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	.....
Calumet	Houghton	1,246	24	56.6	- 5.6	75	13	45	15†	20	5.78	+ 2.98	2.50	0	15	8	8	15	e.	E. S. Grierson.	
Chatham	Alger	875	11	56.7	- 5.2	80	13†	31	15	43	3.00	- 0.20	0.58	0	11	10	7	14	n.	Upper Peninsula Exp. Sta.	
Deer Park	Luce	610	11	57.8	- 3.7	78	6†	44	16	29	3.10	+ 0.40	1.80	0	4	9	0	22	nw.	Mrs. Sarah E. McGaw.	
Detour	Chippewa	585	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	.....	.....	.....	.....	.....	Linton Melvin.
Eagle Harbor	Keweenaw	622	13	53.6	- 8.7	77	12	44	15	29	4.51	+ 1.69	2.60	0	8	7	13	11	e.	John Nolen.	
Escanaba	Delta	612	39	59.3	- 5.2	83	13	42	15	21	7.46	+ 3.85	1.88	0	17	3	9	19	s.	U. S. Weather Bureau.	
Ewen	Ontonagon	1,147	11	58.3	- 3.2	80	12†	33	4	34	3.37	+ 1.38	1.30	0	13	10	2	19	nw.	W. B. Hatfield.	
Grand Marais	Alger	610	11	57.6	- 4.8	74	12	43	16	22	3.54	+ 1.14	0.60	0	18	9	8	14	nw.	Mrs. Lena Truedell.	
Green	Ontonagon	622	1	63.6	.....	79	13	54	9	19	6.24	.....	1.49	0	7	9	5	17	sw.	T. A. Green.
Houghton	Houghton	668	11	57.6	- 6.0	77	12	45	23	24	5.31	+ 2.44	1.73	0	16	3	9	19	e.	U. S. Weather Bureau.	
Humboldt	Marquette	1,536	15	58.3	- 1.5	78	12†	31	5	41	.....	.....	.....	0	.....	.....	.....	.....	.....	D., S. S. & A. Ry.
Iron Mountain	Dickinson	1,111	11	61.4	- 2.7	87	24	40	16	33	6.77	+ 4.02	1.48	0	15	8	15	8	sw.	Chapin Mining Co.	
Iron River	Iron	1,504	15	59.9	- 2.3	84	24	32	4	39	8.65	+ 4.61	1.35	0	12	13	7	11	ne.	Victor D. Laing.	
Ironwood	Gogebic	1,520	9	58.8	.....	81	25	38	29	31	4.87	.....	1.15	0	12	12	5	14	s.	J. V. Brennan.
Ishpeming	Marquette	1,836	12	57.4	- 5.3	78	24	37	16	32	5.85	+ 2.66	1.20	0	15						

TABLE 1.—Climatological data for August, 1912. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.				Sky.				Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.		Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.
<i>Michigan—Lower Peninsula.</i>																				
Adrian	Lenawee	770	34	68.5	-3.4	93	31	45	3	38	2.80	-0.42	0.59	0	11	6	18	7	sw.	H. E. Hubbard.
Allegan	Allegan	698	21	70.4	+0.4	96	25	44	13	33	4.02	+1.62	0.94	0	7	1	19	11	nw.	Pere Marquette R. R.
Alma	Gratiot	750	25	64.6	-2.7	89	13	42	17	39	3.68	+1.08	1.60	0	10	8	10	13	nw.	F. M. Smith.
Alpena	Alpena	609	39	61.0	-2.8	86	13	44	30	30	5.12	+1.78	2.12	0	12	4	14	13	nw.	U. S. Weather Bureau.
Ann Arbor	Washtenaw	930	32	67.1	+2.1	89	26	45	3	37	3.61	+0.98	1.03	0	14	5	14	12	n.	University of Michigan.
Arbela	Tuscola	728	16	64.8	-4.0	88	25	41	16	40	3.76	+0.94	0.82	0	11	0	14	17	n.	Wm. Atkin.
Battle Creek	Calhoun	822	28	67.7	+3.0	91	31	44	13	37	5.18	+2.17	1.47	0	10	11	11	9	sw.	Elmer E. Sager.
Bay City	Bay	593	16	64.8	-3.5	90	26	43	27	39	6.88	+3.89	1.93	0	14	1	11	11	sw.	Pere Marquette R. R.
Benzonia	Benzie	832	15	62.5	-2.1	86	25	42	16	30	2.77	+0.10	0.68	0	11	7	17	7	nw.	Wallace Nutting.
Berlin	St. Clair	23	65.4	-2.8	88	24	43	30	43	4.25	+1.27	0.60	0	18	0	19	11	nw.	R. O. Gould.	
Big Rapids	Mecosta	906	16	63.8	-2.3	87	25	43	4	34	3.61	+0.92	1.41	0	9	1	19	11	sw.	Supt. waterworks.
Blissfield	Lenawee	687	0	68.4	.....	92	31	45	5	35	4.37	.....	0.91	0	11	18	10	3	sw.	John M. Haven.
Bloomington	Van Buren	8	66.2	.....	91	31	42	4	36	7.24	.....	2.97	0	9	16	9	6	sw.	Cadillac W. & L. Co.	
Cadillac	Wexford	1,293	3	62.0	.....	87	25	42	4	34	5.19	.....	2.58	0	14	5	11	15	w.	Michigan Central R. R.
Cassopolis	Cass	903	11	69.6	+0.2	90	19	50	3	31	1.33	-1.37	0.96	0	6	20	0	11	w.	Pere Marquette R. R.
Charlevoix	Charlevoix	610	34	62.6	-3.7	84	13	44	2	26	3.94	+2.03	1.04	0	7	10	9	12	sw.	City of Charlotte.
Charlotte	Eaton	8	66.0	.....	88	31	44	3	40	1.82	.....	0.39	0	8	9	13	9	sw.	E. A. Bouchard.	
Cheboygan	Cheboygan	611	22	60.7	-4.3	85	13	40	16	38	5.58	+2.52	1.75	0	10	6	15	10	sw.	David Woodward.
Clinton	Lenawee	830	22	69.0	+1.1	94	31	44	3	40	2.03	+0.09	0.57	0	9	11	14	6	nw.	L. S. & M. S. R. R.
Coldwater	Branch	984	15	68.8	+1.1	92	31	44	3	35	2.98	-0.81	0.88	0	11	16	7	7	sw.	W. N. Armstrong.
Concord	Jackson	7	68.4	.....	90	24	43	2	40	.....	.....	.....	0	12	13	0	0	sw.	Gr. Rap. Musk. Power Co.	
Croton	Newaygo	685	4	65.2	.....	86	25	40	24	43	3.30	.....	1.00	0	8	7	17	7	sw.	U. S. Weather Bureau.
Detroit	Wayne	730	41	67.4	+2.5	90	31	51	16	28	4.05	+1.28	1.28	0	13	8	14	9	n.	H. J. Tobin.
Durand	Shiawassee	799	4	67.0	.....	92	25	44	3	43	2.11	.....	0.82	0	10	11	6	14	sw.	Detroit & Mackinaw Ry.
East Tawas	Iosco	590	15	61.6	-4.2	81	24	42	3	36	4.00	+1.70	1.50	0	12	14	12	5	sw.	John Gilmore.
Eloise	Wayne	640	15	67.6	+2.6	91	31	47	3	37	4.31	+1.70	0.72	0	15	7	11	13	e.	William L. Fisher.
Flint	Genesee	730	23	64.4	-3.1	87	25	41	16	38	2.98	+0.41	0.55	0	14	11	4	16	n.	Geo. Morency.
Frankfort	Benzie	589	8	62.4	.....	80	25	47	16	18	2.91	.....	1.18	0	7	8	0	23	n.	H. H. Hutchins.
Ganges	Allegan	665	3	65.9	.....	86	31	45	3	25	3.72	.....	0.91	0	9	17	4	10	sw.	Michigan Central R. R.
Gaylord	Osego	1,367	12	58.4	-4.3	85	25	30	4	48	5.62	+2.30	1.27	0	12	0	9	22	sw.	Geo. R. Smith.
Gladwin	Gladwin	794	16	65.0	+1.1	90	25	40	3	40	2.55	-0.06	1.40	0	4	16	7	8	s.	U. S. Weather Bureau.
Grand Haven	Ottawa	31	64.4	-3.4	84	31	47	5	26	2.43	+0.15	0.90	0	11	10	14	7	sw.	Do.	
Grand Rapids	Kent	707	23	66.9	+3.1	90	31	46	3	32	3.16	+0.57	1.31	0	10	7	12	12	n.	Joseph W. Morris.
Grape	Monroe	625	22	68.4	+1.7	91	31	45	3	34	4.23	+1.61	1.29	0	14	12	11	8	sw.	Menzo Conklin.
Grass Lake	Jackson	989	6	68.3	.....	90	31	47	4	30	4.38	.....	1.00	0	12	17	2	12	sw.	S. N. Inasley.
Grayling	Crawford	1,147	22	60.2	-4.0	85	25	37	16	40	4.36	+1.51	1.00	0	13	5	12	14	w.	Michigan Pickle Co.
Greenville	Montcalm	802	0	67.0	.....	90	25	46	27	30	.....	.....	.....	0	10	1	9	3	n.	Pere Marquette R. R.
Harbor Beach	Huron	635	24	60.6	-5.8	90	26	37	6	42	1.55	-1.07	0.50	0	8	15	14	2	n.	Do.
Harrison	Clare	1,159	19	63.2	-2.4	88	25	42	16	40	2.60	+0.45	0.82	0	6	3	10	18	w.	Pere Marquette R. R.
Harrisville	Alcona	616	28	60.5	-4.5	86	25	40	30	26	6.02	+2.50	1.70	0	14	6	8	17	sw.	D. W. Mitchell.
Hart	Oceana	698	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	sw.	Pere Marquette R. R.
Hayes	Huron	620	22	64.3	-2.2	87	25	41	15	39	2.85	+0.19	0.83	0	12	1	26	4	nw.	C. F. Lepprandt.
Highland	Oakland	1,006	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	sw.	A. D. De Garmo.
Hillsdale	Hillsdale	1,150	15	67.0	-1.9	90	31	42	3	37	3.95	+1.42	0.65	0	10	15	12	4	sw.	C. L. Herron.
Holland	Ottawa	610	6	66.6	.....	89	31	42	5	30	2.78	.....	0.62	0	11	12	10	9	sw.	City of Holland.
Howell	Livingston	924	20	66.4	+1.5	89	31	45	3	39	2.29	-0.33	0.85	0	9	7	10	14	sw.	Frank Sharp.
Ivan	Kalkaska	23	60.9	-4.3	87	25	39	16	34	5.20	+2.30	1.54	0	19	2	22	7	nw.	O. L. Giddings.	
Jackson	Jackson	927	15	67.6	+3.2	90	25	44	3	39	5.01	+2.69	2.25	0	12	8	16	7	w.	City of Jackson.
Jeddo	St. Clair	667	23	64.5	-3.4	87	12	44	10	37	4.74	+1.97	1.33	0	13	7	13	11	sw.	William Bice.
Kalamazoo	Kalamazoo	955	30	67.2	+2.7	92	25	42	3	33	3.79	+5.25	2.75	0	11	12	11	8	nw.	Kalamazoo Asylum.
Lansing (Agr. College)	Ingham	820	48	65.7	-2.7	89	31	46	3	38	2.10	-0.44	0.76	0	14	9	15	15	nw.	U. S. Weather Bureau.
Lansing (Capitol)	do	881	25	66.0	+2.5	90	24	46	2	37	2.25	-0.60	0.77	0	15	6	8	17	sw.	State Board of Health.
Lapeer	Lapeer	827	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	sw.	Michigan Home.
Ludington	Mason	586	14	62.0	-5.6	79	12	44	15	31	4.32	+2.11	1.42	0	9	2	26	3	sw.	Pere Marquette R. R.
Luther	Lake	1,028	2	62.1	.....	89	25	35	3	41	3.17	.....	1.12	0	16	4	13	14	nw.	John W. Nicholson.
Mackinaw	Cheboygan	592	21	58.8	-5.8	80	24	40	3	32	1.90	-1.38	1.00	0	7	9	21	1	n.	G. R. & I. Ry.
Mancelona	Antrim	1,121	16	57.9	-6.6	85	25	35	24	43	4.03	+1.80	1.30	0	12	14	3	14	w.	Do.
Manistee	Manistee	600	15	63.8	+1.2	86	26	44	3	30	.....	.....	.....	0	.....	7	7	14	nw.	Pere Marquette R. R.
Marshall	Calhoun	896	0	64.0	.....	89	24	45	5	37	.....	.....	.....	0	.....	.....	.....	.....	sw.	E. B. Stuart.
Midland	Midland	604	13	67.0	+1.9	92	25	45	4	31	2.38	+0.55	0.80	0	6	0	7	24	se.	Pere Marquette R. R.
Morenci	Lenawee	811	5	67.6	.....	90	25	43	5	35	5.27	.....	1.10	0	12	7	13	11	sw.	George J. Tripp.
Mount Clemens	Macomb	615	12	67.2	+2.5	92	31	45	16	37	4.80	+2.66	1.00	0	12	5	7	19	sw.	Waterworks.
Mount Pleasant	Isabella	826	13	65.0	-2.2	89	25	44	3	35	2.93	+0.79	0.92	0	6	6	15	7	sw.	Pere Marquette R. R.
Muskegon	Muskegon	587	16	65.8	+2.7	85	31	44	5	23	2.36	+0.39	0.90	0	10	19	10	2	s.	G. R. & I. Ry.
Old Mission	Grand Traverse	858	18	62.0	-5.1	82	13	47	16	32	5.81	+2.77	1.16	0	17	2	19	10	n.	E. O. Ladd.
Olivet	Eaton	934	22	65.6	+2.4	87	31	44	3	31	3.07	-0.26	0.58	0	11	15				

TABLE 1.—Climatological data for August, 1912. District No. 4—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Observers.				
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.		Number of overcast cloudy days.	Prevailing wind direction.		
Ohio—Continued.																						
Bucyrus.....	Crawford	1,000	18	69.1	- 1.9	92	25†	42	52	5	42	2.67	- 0.11	1.10	0	12	10	3	18	sw.	James R. Hopley.	
Cleveland (1)	Cuyahoga	782	41	67.6	- 2.8	87	25	52	28	5	42	4.54	+ 1.39	0.80	0	16	1	14	16	se.	U. S. Weather Bureau.	
Cleveland (2)	do.	754	15	68.3	- 2.1	89	25	51	18	5	33	3.25	+ 0.49	0.94	0	13	6	14	11	nw.	Rev. F. L. Odenbach, S. J.	
Conneaut	Ashtabula	675	2	67.0	.....	89	25	46	5	5	33	4.21	.....	1.00	0	12	7	7	17	sw.	E. L. Ransom.
Findlay	Hancock	776	23	69.0	- 2.9	92	31	43	3	5	36	3.75	+ 1.04	0.32	0	13	19	4	4	17	sw.	Dr. E. A. Moser.
Freemont	Sandusky	725	10	69.6	- 1.7	91	31	47	5	5	32	3.83	+ 0.14	1.67	0	13	16	5	5	9	sw.	E. Stanley Thomas.
Hedges	Paulding	725	18	69.8	- 1.0	93	31	43	3	5	35	2.37	+ 0.28	1.15	0	9	15	11	5	9	nw.	Charles Stutzman.
Hillhouse	Lake	397	19	65.7	- 2.5	87	25†	45	18	3	33	5.49	+ 2.48	1.35	0	14	2	20	3	5	sw.	J. W. Doncaster.
Hiram	Portage	1,260	32	66.5	- 2.4	89	20	46	4	4	30	5.69	+ 2.46	1.63	0	13	5	24	2	2	sw.	Prof. G. H. Colton.
Hudson	Summit	1,123	51	68.0	- 1.7	89	13	45	4	4	42	5.75	+ 2.19	1.08	0	13	9	17	5	5	s.	Dr. W. I. Chamberlain.
Lima	Allen	875	13	68.8	- 1.7	89	31	45	3	3	31	4.62	+ 1.62	1.77	0	9	13	5	13	w.	Miss Ollie De Long.	
Medina	Medina	944	24	67.3	- 3.5	88	18	43	4	4	31	3.56	+ 0.40	0.63	0	13	16	7	8	8	s.	F. W. Clark.
Napoleon	Williams	880	20	69.3	- 0.7	94	25†	44	4	4	35	3.05	+ 0.20	0.87	0	11	14	9	8	8	w.	G. L. Laser.
New Bremen	Henry	638	25	67.5	- 3.6	89	26†	47	3	3	31	3.40	+ 0.77	0.93	0	10	11	11	9	9	w.	A. D. Senter.
North Royalton	Augszize	1,038	19	69.4	- 3.0	89	31	42	3	3	30	2.84	+ 0.16	0.90	0	12	7	16	8	nw.	Miss Lillian Grothaus.	
Norwalk	Cuyahoga	1,000	19	67.0	- 3.4	87	31	45	4	4	30	4.10	+ 0.49	0.63	0	13	10	18	3	nw.	W. S. Edgerton.	
Oberlin	Huron	719	26	68.9	- 1.6	92	31	46	30	30	4.24	+ 1.13	1.13	0	13	8	14	9	9	w.	Giles R. Gregory.	
Ottawa	Lorain	855	57	68.3	- 1.1	89	31	46	29	29	3.22	+ 0.45	0.61	0	15	6	18	7	7	s.	Prof. F. F. Jewett.	
Sandusky	Putnam	730	19	68.8	- 3.3	90	31	45	3	3	30	4.05	+ 1.28	2.15	0	12	3	11	17	sw.	Prof. J. T. Maidlow.	
Toledo	Lucas	629	35	69.0	- 2.5	89	25	53	28	28	3.57	+ 0.20	1.09	0	13	5	16	10	6	sw.	U. S. Weather Bureau.	
Upper Sandusky	Seneca	775	30	69.5	- 1.4	92	25	49	5	5	30	1.90	- 0.74	0.30	0	12	15	10	6	sw.	Prof. T. H. Sonnedecker.	
Vicksy	Wyandot	854	29	68.0	- 3.0	88	25†	44	5	5	28	3.48	+ 0.78	0.84	0	14	11	13	7	sw.	U. S. Weather Bureau.	
Wapakoneta	Sandusky	588	19	69.4	- 1.6	94	31	45	5	5	35	3.84	+ 1.06	1.31	0	13	5	15	11	sw.	Robert E. Tracht.	
Wauseon	Augszize	898	70	70.9	96	25†	48	3	3	27	2.99	1.14	0	12	8	12	5	5	s.	John W. Barr.
Wickliffe	Fulton	780	40	68.2	- 2.1	92	25	43	5	5	36	4.49	+ 1.73	1.80	0	15	7	17	7	7	s.	Dr. Wm. Kayser.
	Lake	740										7.13		1.67	0	14	14	6	12	6	w.	Thomas Mikesell.
																					C. M. Richardson.	
Pennsylvania.																						
Erie.....	Erie.....	658	39	66.2	- 3.7	83	26	51	30	23	5.90	+ 2.64	1.19	0	16	1	13	17	s.	U. S. Weather Bureau.		
New York.																						
Adams Center.....	Jefferson	540	21	65.3	- 3.5	85	13	38	10	30	4.25	+ 1.47	0.98	0	20	5	17	9	9	w.	A. E. Cooley.	
Angelica	Allegany	1,340	29	61.6	- 3.3	84	25	37	17	34	4.93	+ 0.86	1.35	0	18	1	10	20	nw.	Charles P. Arnold.		
Appleton	Niagara	270	21	64.8	- 2.6	83	14†	44	17	28	3.52	+ 0.85	0.95	0	17	8	14	9	9	nw.	H. A. Van Wagoner.	
Auburn	Cayuga	715	45	64.6	- 4.2	85	14†	42	31	24	3.89	+ 0.47	0.82	0	13	17	12	2	2	sw.	A. H. Underwood.	
Avon	Livingston	655	17	66.0	- 1.5	85	8†	41	30	27	2.68	- 0.46	0.67	0	10	5	18	8	8	w.	W. G. Markham.	
Blue Mountain Lake	Hamilton	1,750	12	.....	.....	.....	.....	.....	.....	.....	5.41	+ 1.76	0.67	0	14	7	12	12	w.	B. F. Merwin.	
Brockport	Monroe	537	16	65.3	- 3.4	85	13	40	30	31	2.58	- 0.01	0.46	0	21	3	20	8	8	s.	W. H. Lennon.	
Buffalo	Erie	671	61	64.8	- 4.0	87	13	46	30	26	4.00	+ 1.01	1.65	0	16	1	15	15	5	sw.	U. S. Weather Bureau.	
Canton	St. Lawrence	448	18	61.8	- 4.8	82	11	38	1	30	4.44	+ 1.75	1.07	0	16	2	11	18	18	sw.	Do.	
Cape Vincent	Jefferson	246	7	64.8	.....	82	14	47	30†	28	4.14	.....	0.97	0	14	9	9	13	13	w.	J. Harry Grapotte.
Chazy	Clinton	1,511	12	63.6	- 2.8	84	13	47	1	28	4.69	+ 1.89	1.30	0	11	5	15	11	11	s.	W. R. North.	
Dannemora	do	1,490	7	61.5	.....	79	13	42	30	22	4.58	.....	1.26	0	16	1	8	22	2	w.	Dr. W. N. Thayer.
Elba	Genesee	500	13	62.8	- 2.3	84	13	39	30	28	3.79	+ 1.08	0.76	0	13	12	6	13	5	sw.	Joseph S. Wilford.	
Fayetteville	Onondaga	530	11	65.4	- 3.2	90	13	38	30	30	4.31	+ 0.61	1.32	0	12	8	18	5	nw.	Dana H. Wells.		
Gabriels	Franklin	1,729	10	58.0	.....	81	13	31	16†	38	3.45	.....	0.80	0	15	4	15	12	12	w.	Gabriels Sanitarium.
Harkness	Clinton	622	10	62.1	- 4.5	84	13	42	16	25	3.49	+ 1.27	1.18	0	18	16	7	8	8	w.	J. W. Harkness.	
Hemlock Lake	Livingston	900	14	64.9	- 3.6	84	13	41	30	26	2.72	- 0.07	0.58	0	15	8	13	10	10	nw.	Bernard P. McGrady.	
Hunt	do	1,321	13	63.9	- 3.6	85	14	40	30	28	3.50	+ 0.72	0.73	0	12	3	18	10	10	sw.	W. S. Barager.	
Ithaca	Tompkins	928	34	64.7	- 3.5	86	13	41	31	32	3.54	+ 0.30	1.12	0	18	5	20	6	nw.	U. S. Weather Bureau.		
Keene Valley	Essex	1,000	14	61.2	- 3.0	86	13	36	31	39	3.86	+ 0.23	0.83	0	21	4	11	16	16	nw.	E. R. Wells.	
King Ferry	Cayuga	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.10	+ 0.30	0.80	0	17	7	12	12	12	nw.	Lucius A. Goodyear.
Lake George	Warren	350	15	64.2	- 2.5	89	14	39	31	34	4.36	+ 0.24	1.67	0	12	5	19	7	7	sw.	Charles Forsell.	
Lake Placid Club	Essex	1,864	4	51.4	.....	76	13	30	31	30	4.19	.....	0.65	0	20	3	18	10	nw.	Henry Van Hoebenber.	
Lauterbrunnen	Wyoming	0	0	64.1	.....	88	13	41	2†	33	3.11	.....	0.54	0	13	0	23	8	8	nw.	James O. Howard.
Lockport	Niagara	520	25	65.4	- 3.0	86	13	43	30	28	3.78	+ 1.26	0.74	0	13	10	14	7	7	sw.	Robert N. Clark.	
Lowville	Lewis	900	45	63.4	- 1.5	87	13	39	17	38	3.13	- 0.09	1.08	0	15	9	21	1	1	sw.	Prof. W. F. H. Breeze.	
Moir	Franklin	200	12	61.4	- 4.9	81	13	38	30	29	3.59	+ 0.34	0.69	0	14	6	14	11	11	w.	C. E. McBride.	
Nehasane	Hamilton	1,750	4	57.6	.....	80	13	31	17	36	3.60	.....	1.00	0	21	4	23	4	4	w.	L. W. Brown.
North Lake	Herkimer	1,822	11	59.6	.....	80	13	32	51	29	3.30	.....	0.92	0	12	13	11	7	7	sw.	John F. Redmond.
Ogdensburg	St. Lawrence	1,75	28	64.5	- 3.0	83	14	43	30	26	4.58	+ 1.54	1.22	0	10	4	23	4	4	s.	State Hospital.	
Old Forge	Herkimer	1,733	4	58.4	.....	80	13	31	30	32	3.75	.....	0.66	0	19	5	11	15	15	w.	Mrs. S. W. Nelson.
Oswego	Oswego	335	42	64.2	- 4.6	81	11	46	31	23	2.81	+ 0.12	0.80	0	11	5	13	13	13	s.	U. S. Weather Bureau.	
Otto	Cattaraugus	1,410	8	62.6	.....	84	12	43	18	32	4.25	.....	0.54	0	21	9	13	9	9	sw.	William J. Winko.
Palermo	Oswego	460	53	.....	.....	.....	.....	.....	.....	.....	2.36	- 0.49	0.90	0							

TABLE 2.—Daily precipitation for August, 1912. District No. 4, Lake region.

Stations.	Watershed.	Day of month.																															Total.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
<i>Minnesota.</i>																																	
Cloquet.....	L. Superior.					.30	.68	T.	T.	.65	T.							.31			T.		T.						.38		.70	.22	3.24
Duluth.....	do.	T.		T.		.16	.16	.10	.03	1.02	T.						.02	.38	T.	.01	T.	.01	T.	.01	.03	.14		.16	.31	T.	.67	.18	3.25
Floodwood.....	do.					.20	1.00			.70								.14												.22	.51	.07	3.12
Stephens Mine.....	do.	T.				.06	.08	.10		.09	.20			.26				.24											T.	.85	.08	.26	2.86
Two Harbors.....	do.	T.				.05	.05			.30								T.											T.	.48	.40	.22	2.45
Virginia.....	do.					.15	.05	.33		.15				.36				.33				.18		.06		.51			T.	.87		.16	3.10
<i>Wisconsin.</i>																																	
Appleton.....	Fox.	.13	.08	T.		.10	T.			1.57	.08							.22	.68				.08		.02			2.02		.65	.44	6.07	
Ashland.....	L. Superior.									1.89	1.27	.06						.54	T.	.08	.03	.01		.02				.31		.33	.22	4.76	
Bayfield.....	do.									.16	.94	1.17	.05					.46			.08			.04				1.05		.39		4.34	
Cecil.....	Fox.	.18		T.				.21	.14	.94	1.38							1.19	.30									.78		.49	.05	5.86	
Cornucopia.....	L. Superior.	T.	.03			T.	.04		T.	.43	.71			T.	T.			.31		T.	.08			.21	.03		T.	.49		.31	.22	6.95	
Crandon.....	Fox.	T.	.07				.74	.38	T.	1.85	1.01	.14						1.19	.06		.03	.16	.04	T.	.05	.08		.65		.30	.20	2.86	
Florence.....	Menomonee.						1.38				1.73							1.12	.02		.43				.72			.79		.46	.65	6.65	
Fond du Lac.....	Fox.	.16	.50	T.			.05			.65	.22	.30		T.				.01	.09	1.12			.12				1.90		1.42	.02	6.56		
Grand River Locks.....	do.						.10			.30	.12	.60		.08	.08			2.75	.18				.08				1.32		2.00	1.00	7.91		
Green Bay.....	L. Michigan.	.05		T.			.08			.33	.53			.04				.70	.51	T.			.03			.01		.02	1.02		.50	3.92	
High Falls.....	do.	.01	T.	T.			.60	.61	.28	.78	.75	.10						1.34	.04	.05	T.							.58		.18	.38	6.81	
Iron River.....	L. Superior.	.05				.15	.20	.05	T.	.40	.68							.70	T.	.06	.04			.06				T.	.48	T.	.42	3.53	
Kewaunee.....	L. Michigan.		.12				.20			.90								.68	.48									.94		.54	.40	4.08	
Manitowoc.....	do.	.03					.12			.84			T.	T.				.15	T.				.10	.07				1.64		.48	.30	3.77	
Menasha.....	Fox.	.15					.19	.03	.08	.94	.74	.74						.16	.07	.04			.05				2.19		1.16		5.80		
Menomonee Falls.....	L. Michigan.	.56					T.	.23	.32	.13	.16	T.						T.	.25	.22	T.						.40		.45		2.76		
Milwaukee.....	do.	.10				T.	T.	.13	.32	.15	.11			T.				T.	.25	.17	T.						.32		.58		2.14		
New London.....	Fox.	.05					.06	.30	1.05	1.58	.42							.60	.50	.30							1.60		.75	.15	7.60		
Oconto.....	L. Michigan.	.12							.12	2.38								.63	1.17	.14							.66	.11	.11	.18	9.02		
Oshkosh.....	Fox.	.16					.06			.02	1.60	.08						.06	.06		.28			.09			T.	1.22		1.20	.61	5.38	
Pine River.....	do.	.04					.02	.50	1.84	.02	.53							.22	.18	.11				.06		.02		1.71		.95	.29	6.51	
Plum Island.....	L. Michigan.	.10	.02				.32	.80	.30	.72		.03	.03					.90	.12			.18			.05	.07	.11	1.70		.10	.87	5.45	
Plymouth.....	do.	.13	.02	T.			T.	.10	.23	.68	T.			T.				.02	.20	.52		T.	.09				1.18	.01	1.41	.02	4.61		
Port Washington.....	do.	.28					.16	.10	1.16	.05								.10	.22								.90	.05	.62		3.64		
Racine.....	do.	.14					T.	.24	.12	.16	.12	.03						.05	.44								.43		.07		1.80		
Ripon.....	Fox.	.92					.07			.55	.35	.32							.20	.47							1.10		1.72	.50	6.35		
Sheboygan.....	L. Michigan.	T.					T.	T.	T.	1.28	.04			T.				.15	.20	1.70	T.						1.28		.98	T.	5.73		
Sturgeon Bay.....	do.	.04	.45				.11			2.57	.07	T.						1.33	.44	.09							.60		.19	.11	6.00		
Superior †.....	L. Superior.	.06					.47	.30	T.	.62	.56	.01						.56	.02		T.	.02	.02	.01			.40	.09	.50	.17	3.81		
Waupaca.....	Fox.	.15					.15	.17	.82	.07	.63	.01						.36	.29	.09							2.25		.88	.12	6.11		
<i>Illinois.</i>																																	
Chicago.....	L. Michigan.	T.				T.	T.	.04	.72	1.30	.80	.02		.12					.07	.38	.14										3.59		
Evanston.....	do.	T.	.04	T.			.15	.55	1.07	.22	.16							.07	.60	.13							T.	.15		T.	3.14		
Highland Park.....	do.	.13					.02		.15	2.63	.35	.37	.07						.07	.02	1.65										5.69		
<i>Indiana.</i>																																	
Auburn †.....	Maumee.....								1.93	.05	.19	.71		.05	.03			.15	1.06	.14	.06	.05	.51	.40					.77		T.	6.10	
Berne.....	do.	T.	.03				.54	.07	1.60	.07	.52		.21					1.98		.06	.08	.39						.23			5.78		
Elkhart.....	St. Joseph.																																
Fort Wayne.....	Maumee.....						.32	.14	.12	.74	.22		.05	.18				1.10	1.18	T.	.07	.38	.28	T.			.26		T.	T.	5.04		
Hammond.....	L. Michigan.						.40	.18		.60									.09	.28								.10		T.	1.65		
Howe †.....	St. Joseph.									.92	.62	.08							.20	.10	.10						.15	.50		.05	2.92		
Notre Dame †.....	do.						.04	.44	1.24	.65	.07		.01					1.55	1.55	.06	.11		.17							.28	6.17		
Whiting.....	L. Michigan.						.32	.58	.20	.13	.03			T.					.48	.37	.03							T.	.02	T.	2.16		
<i>Michigan—Upper Peninsula.</i>																																	
Baraga.....	L. Superior.				.20		.20	.30	.10	.40	.20							.40	.20	.10								.20		.30		2.60	
Bergland.....	Ontonagon.	T.	T.				.51	T.	T.	1.26	1.57	T.						.52	T.				T.	.11	.57			.73	T.	.60	T.	5.87	
Blaney.....	Manistique.																																
Calumet.....	L. Superior.	.08					.27	.19		.33	2.50							.65	.13		.12		.05	.05	.38		.07	.42		.46	.08	5.78	
Chatam.....	do.						.35	.10		.50	.40	.01						.58	.58			.15						.35		.10		3.00	
Deer Park.....	do.	T.								1.80	T.							.30							.60				.40			3.10	
Detour.....	St. Marys.																																
Eagle Harbor.....	L. Superior.		.18					.18			2.60	.16							.40										.14		.15	4.51	
Escanaba.....	L. Michigan.	.16	.03				.44	1.14	.03	.34	.01	.04		.01				.76	.02	T.	.36			T.	T.	1.58		T.	.41	.27	7.46		
Ewen.....	Ontonagon.	.05	.01					.02	.05	.30	.10								.39						T.	.03	.53	.03	T.	T.	3.37		
Grand Marais.....	L. Superior.			.14				.12	.05	.20	.60	.20	.05	.13				.30	.05	.10		.10	.10	.20	.40	T.		.10	.30	.10	3.54		
Green.....	do.						.71			.90	1.49	.21							.59										1.18	1.16	6.24		
Houghton.....	do.	.04					.40		.14	.53	1.54								.56	.03		T.	.02	.02	.10	.75		.01	.26	.04	5.31		
Humboldt.....	Escanaba.																																
Iron Mountain.....	Menominee.	.12	.18				.90	.44	.04	.48	1.00	T.						1.48	.03		.24	.10	T.	.05	.65			.81		.25	6.77		
Iron River.....	do.	T.	T.				1.10	.25	.10	1.35	1.15																						

TABLE 2.—Daily precipitation for August, 1912. District No. 4—Continued.

Table with columns for Stations, Watershed, Day of month (1-31), and Total. Rows include Michigan—Lower Peninsula—Con. (Arbela to Ypsilanti) and Ohio (Akron to Fremont).

TABLE 2.—Daily precipitation for August, 1912. District No. 4—Continued.

Stations.	Watershed.	Day of month.																															Total.		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
<i>Ohio—Continued.</i>																																			
Hedges	Maumee						1.15	.07	.18										.14	.12		.04	.30								.54		.03	2.57	
Hillhouse	Lake Erie	.20	.18	T.			1.03	T.	.31	.34			.10							.22	.02	.23	T.	.62			1.35	.05	.25	T.	.53		5.49		
Hiram	do.	.17	.10	T.			.11	.42	.22	.59	.45		T.	T.						.49		.18		.34			1.63		.34	.65		5.69			
Hudson	do.		.38						.50	.30	.50	.02		.03							.45		.33		.36			1.08		.34	.87		5.75		
Lima †	Maumee		T.					.30	.77	.21	.70	T.								T.	.50	T.		.25	.15		.20			.54		4.62			
Medina	Lake Erie		.10				T.	.14	.37	.11	.63			.11					T.	T.	.46		.05	.24			.05	T.	.54	.36		4.40			
Montpelier	Maumee						.54	T.	.52	.38		.12					.07			.12		.03	T.	.30			.04			.87		.06	3.05		
Napoleon	do.						.93	.02	.50	.52										.15	T.	.17		.16	.35					.47		.13	3.40		
New Bremen	do.						.54	.01	.08	T.	.23	.02	.20							.90	.05	.05						T.	.13	.30		2.84			
North Royalton	Lake Erie		.10				.43	.20	.17	.20	.83			.08						.01	.01	1.09	.66	.17	.12			.32	.53	.57		4.10			
Norwalk †	do.			.07				.39	.05	.17	.35									.01	.01	1.09	.66	.17	.12			.32	.53	.57		4.24			
Oberlin	do.	T.	.22				.11	.02	.45	.04	.31	T.	.01						T.	T.	.61	.01	.56	.01	.18	T.		.55	T.	.10	T.	3.22			
Ottawa	Maumee		T.				.34	2.15	.06	.07	.22	T.	.01		.01				.15	T.	.24		.04	.24					.45	T.	.08	4.05			
Sandusky	Lake Erie		.06				.43	.35	.13	T.	.17		.01						.03	T.	.71	.17	.92	T.					.56	.02	T.	.01	3.57		
Tiffin	Sandusky						.29	.30	.18	.19	.28									.20	.02	.05	.02	T.	.11				.22	.04	T.		1.90		
Toledo	Maumee		T.				.67	.07	.01	.22	.11		.14	T.						.04	.25	.59		.48	.26			.07	T.		.07	3.48			
Upper Sandusky	Sandusky						.57	.10	.15	.12					T.	.14				.03									.50	T.	.15	.20	3.64		
Vickery	Lake Erie	.01	.03				.83	.48	.03		.50								.03	.14	.87	.17		.03	T.				.69	.03	T.		3.84		
Wapakoneta	Maumee		T.				.19	.11	T.	.14			.10							.77	T.	.04	.02	.11	.07			.15	.25	.04	T.		2.99		
Watseon †	do.			.03				1.80	.03	.13	1.06	.02	.08						T.	.11	.03	.04	.06					.09		.49		4.49			
Wickliffe †	Lake Erie		.34				.23	1.19	.05	.43	.66	.30											.03		1.27		1.67	.18	.25	.18		7.13			
<i>Pennsylvania.</i>																																			
Erie	Lake Erie	.33	.22				T.	.75	.47	.50	.30		.01	T.			.19		.27	1.02	.01		.09	.22			1.19		.29	.04	T.	5.90			
<i>New York.</i>																																			
Adams Center	L. Ontario		.18	.32	.12	.18		.06	T.	.24	.04	.03		.20					.08	.04		.98	.05	.24	.35	.08	.18	.62	T.	.22	.04	T.	4.25		
Angelica	Genesee		.23	.32				.04	.07	.04			.15	.04					.54	.20	.02		.31	.70	.38	.14	1.35	.12	.01		.28	4.93			
Appleton	L. Ontario	.10	.20	.04	T.			.82	1.0	.04	.13		.03						T.	.95	.10		.04	.07	.06	.02		.64		.01		.17	3.52		
Auburn	Oswego		.74	.08		.22			T.	.70	.08	.11		.08						.75	.38		.05	.28				.18				.24	3.89		
Avon	Genesee	.05	.23	.32					T.	.25	T.									.67	.19		.31	.19					.27		.20	2.68			
Blue Mount Lake	Raquette								T.	.47	.63								.27				.67	.53	.47	.35	.27	.30	.23	.27	.35	.43	1.71	5.41	
Brookport	L. Ontario	T.	.23	.13		.01		.33	.02	.01	.18	.08							.02	.46	.16		.04	.06	.12	.02		.12	.21	.04	.02		.12	2.58	
Buffalo	Lake Erie	1.65	T.			.01	T.	.27	.05	.05	.03		T.	T.	T.					.37	.12	.16		.23	.14	.59		.01	.11		.01	T.	.20	4.00	
Canton	Grass		.14	.93	.36	.26	T.	.14	.49	.04	.24	.01	T.		T.					T.	T.		.27	.38	.25	.08	.75	.05			.05	4.44			
Cape Vincent	St. Lawrence		.50						.97	.07	.01	.07								.19			.05	.05	.20	.40		.83			.25	4.14			
Chazy	L. Champlain		.20	.48	.23	T.	.15		.05		.38		.38									1.30	T.	.10		.90	.50					4.69			
Dannemora	do.		.23	.67	.07	.02	T.		.18	.10	.20	.20										T.	T.	.06	.12	1.05	1.26	.16	T.	.02		4.58			
Elba	L. Ontario	.21	.31	.35		.05	T.	.15	T.	T.	T.									.39	.08	T.	.12	.06	.06	T.		.76	T.		.10	3.79			
Fayetteville	Oswego		.21	1.32	T.				1.02	.16	.03		.14							.39	.14		.12					.79	T.	.08	T.	4.31			
Gabriels	St. Regis			.80	.15	.10	T.	.20	T.	.15	.20	.15		T.	T.					.10	.14		T.	.15	.20	.10	.20	.65	.20	T.	.10	T.	3.45		
Harkness	L. Champlain		.18	1.18	.03	.07	.01		.08		.10	.46	.27	.01		.05					.04	.09		.09	.11	.06		.45	.25	.05		.32	3.49		
Hemlock Lake	Genesee	T.	.41	.07						.09													.23	.31		.06	*	.32	*	.05		.41	2.72		
Hunt	do.	.30	.73							.14													.73	.31				.26	.18	.08		.04	3.50		
Ithaca	Oswego	.04	.57	.06	T.	.11		T.	1.12	.15									.03	.44	.03		.09	.05	.49		.10	.08	.02	.03	.01	.12	3.54		
Keene Valley	Ausable		.19	.28	.15	.10	.05	.03	T.	.03	.23	.83	.11	.05	.15	.13				.15	T.		.05	.05	.04	.05	.24	.35	.48		.26		3.86		
King Ferry	Oswego	.05	.40	.03		.19		T.	.05	.80	.07	.07		.06						.47	.06	.10		.07	.03	.34		T.	.18		.15	3.10			
Lake George	L. Champlain			.25			.02		.11		.67	.18			T.	.33					.31			.62	.36	.11	.23	.17				4.36			
Lake Placid Club	Ausable W. Branch		T.	.54	.13	.08	.07	.05	.06	.04	.32	.54	.04		T.	T.					.05	.04		.26	.08	.34	.25	.28	.65	.28	T.	.09	T.	4.19	
Lauterbrunnen	Genesee	.27	.45	.28				T.	.06	T.	T.		.31									T.	.54	.14		.38	T.	.33		.08	.17	.03		.07	3.11
Lockport	L. Ontario		.21	.11				.33	.12		.06									.74	T.	.24	T.	.27	.18	.05		.62	.69	T.		.16	3.73		
Lowville	Black		1.08	.05	.02	.03			.02	.46	.09			.02						.14		.02		.48	.02	.12	.14						3.13		
Moira	St. Lawrence		.13	.12	.37			.69		.16	.39	.36		T.	.05						.06	T.	.05	T.	.25	T.	.55	.30	.14	T.			3.59		
Nehasane	Black		.18	.55	.08	.11	.02	T.		.02	.24	.08	.05		.01					.10	.02		.46	.01	.14	.17	.20	.44	.56		.13		.03	3.60	
North Lake	do.		.92							.59	.17			.16						.12			.09		.13	.23		.46	.17	.18		.08	3.30		
Odensburg	St. Lawrence	T.	1.22	.23	T.			.64	.30	.64	T.	.12			T.							T.		.13	.30	.62	.38	T.				T.	4.58		
Old Forge	Black		.69	.13	.07	.02			.23	.03	.03		.30							.15	.06		.66	.34	.15	.17	.35	.03	.25		T.	.06	.12	3.75	
Oswego	L. Ontario		.42	.40				.25	.03	.30	T.		.27	T.						T.	.24	T.		T.	.13	.06		.63	.30		.08	.21	2.81		
Otto	Lake Erie		.36	.41	.03		.06		.16	.02	.16	.12	.02	.13		T.					.25	.20	.15	T.	.13	.20		.18	.35	.54	.40	.22	.16	4.25	
Palermo	Lake Ontario		.10	.90				T.	.05	.20	.05	.03	.20							.20	.03		.03	T.	.04	T.		.50	.20			.03	3.36		
Perry City	Oswego	.12			.25			T.	.02	.52	.05	.04	.20							.57	.02		.10				.18	.01	.15		.18		.19	3.00	
Philadelphia	St. Lawrence			.48	T.	.07	T.	.11	.02	.69	.03	T.								.11		.02		.24	.01	.31	.50	.26	1.31	.31		.12	4.57		
Potsdam	Raquette	.15		.72	.45	.38	.02		.55	.08	.17	.02	.03</																						

TABLE 3.—Maximum and minimum temperatures for August, 1912. District No. 4, Lake Region.

Table with columns for Date, Duluth, Minn., Wisconsin (Florence, Green Bay, Milwaukee), Chicago, Ill., Fort Wayne, Ind., Upper Michigan (Escanaba, Ewen, Houghton, Marquette, Sault Ste. Marie), and Lower Michigan (Alpena, Battle Creek, Cadillac). Rows show daily temperature data from August 1st to 31st, including maximum and minimum values for each location.

Table with columns for Date, Lower Michigan (Detroit, Muskegon, Saginaw West Side, Cleveland), Ohio (Lima, Sandusky, Toledo), New York (Buffalo, Canton, Rochester, Syracuse), and Vermont (Burlington, Northfield). Rows show daily temperature data from August 1st to 31st, including maximum and minimum values for each location.

a, b, c, etc., indicate respectively 1, 2, 3, etc., days missing from the record. § § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.